

BOOK REVIEWS

THE BIOLOGY OF ARTERIOSCLEROSIS. By M. C. Winternitz, R. M. Thomas, and P. M. LeCompte. C. C. Thomas, Springfield, Ill., 1938, lxxiv + 144 pp. \$4.

The experimental approach to the study of arteriosclerosis has yielded disappointing results in comparison to the vast effort expended upon the problem. Any new method of attack excites interest, and it is the special virtue of this monograph to have placed in evidence, with great clarity and a profusion of beautiful illustrations, the existence of a rich intramural vascular plexus, which has almost completely escaped the recognition of experienced pathologists.

The methods used are not new ones—injection of India ink under pressure, followed by clearing with glycerine or by the Spalteholz method—but so far as the reviewer is aware, these well-tried technics have not hitherto been applied to a study of the vascular supply of normal or diseased blood vessel walls. They bring out, with startling definition, the presence of ramifying blood vessels derived from three sources—the nutrient vessels of the adventitia, the main trunks of arterial branches close to their point of exit in their passage through the arterial wall, and small vessels arising directly from the lumen of the parent vessel. It is possible at times to distinguish arterial and venous branches, and to demonstrate the anastomoses of the latter with the venous channels of the adventitia.

While it was found difficult to demonstrate this vascular network in the normal systemic arteries of man, the pulmonary aorta and the vena cava were very successfully injected; and in large animals, particularly the cow, excellent preparations were obtained. In general, the richest vascular plexuses were found in the vicinity of arteriosclerotic plaques, and it was this correlation which led the authors to ascribe an important rôle to the nutrient vessels in the genesis of the arteriosclerotic lesion. They discard the idea of a degenerative process as a vague and outmoded conception which has retarded the progress of our knowledge; and they ascribe the pathogenesis of the lesions to exudation and subsequent organization of material derived primarily from the blood vessels of the arterial wall. They emphasize particularly the frequent occurrence of hemorrhages, amorphous products of blood destruction, and pigment, and even credit the extravasated blood with being the main source of the atheromatous material. Furthermore, they describe the occurrence of thrombi and of calcific deposits analogous to phleboliths within the lumina of these intramural vessels.

The problem of arteriosclerosis therefore resolves itself, not into the causes of senescence or of tissue "degeneration," but into an inquiry into the specific agents which damage the permeability of the vasa vasorum, and the specific stimuli which incite the subsequent productive processes leading to the

formation of new blood channels and connective tissue. The studies bring us to this point, leaving for the future the chemical definition of these stimuli and the decision as to whether they are endogenous or exogenous in nature.

Two possible exceptions might be taken, by the critically minded, to the methods used in the investigation. The first is the use of extremely high pressures in the injections—up to 1500 mm. of mercury in some cases. One wonders whether under such unphysiological conditions, the injection material may not be forced into tissue clefts which are not preformed vascular channels. This objection is answered by the demonstration of similar vascular networks in cleared uninjected specimens. Another possibility for the production of artefacts might be the stripping of the adventitia preparatory to clearing, with consequent mechanical rupture of nutrient vessels and resultant hemorrhagic extravasations in the vessel wall. This can be refuted by the frequent presence of older discolored patches, in which the hemosiderin pigment proves the hemorrhage to have occurred prior to any manipulation of the artery.

It seems to the reviewer that Winteritz and his colleagues have made a most interesting and worthwhile contribution to the pathologic anatomy of arteriosclerosis, which may well deflect experimental work into new and profitable channels.

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SHORT YEARS: THE LIFE AND LETTERS OF JOHN BRUCE MAC-CALLUM, M.D., 1876-1906. By Archibald Malloch. Normandie House, Chicago, 1938. Pp. xiii + 343. \$3.50.

The author, or rather the editor, has allowed the subject of this volume to tell his own story and tell it exceedingly well. Thus, in effect, these pages are autobiographical, reflecting through a series of letters noteworthy for their charm, the disappointments, as well as the aspirations and accomplishments, of genius. Whether these letters best document a philosophy of life or the ideals of science is a matter of no importance; both are here presented through eyes that were young but nonetheless discerning.

In and out throughout the pages, described in terms offering unmistakable evidence of the sincerity of youth, march the figures of many of those to whom contemporary medicine owes so much,—Mall, Barker, Flexner, Welch, Halstead, Osler, Loeb, and others, revealing thus, in perhaps the most genuine fashion possible, the influence exerted at the century's turn by these leaders in American medicine.

One may well wonder whether these yours-received-and-contents-noted days, with all their boasted abundance, are leaving for future record anything comparable to these delightful letters of John Bruce MacCallum.

It is unfortunate that a transposition of lines on page 293 should raise a temporary problem of interpretation, but were there many such they could hardly obscure the forthrightness in which so many aspects of life and living are expressed by the writer of these letters.

GEO. H. SMITH.